



SOCIETY OF CARDIOVASCULAR & INTERVENTIONAL RADIOLOGY

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RADIOFREQUENCY ENERGY COOKS, KILLS CANCEROUS TUMORS

AT A GLANCE

- Radiofrequency (RF) energy can "cook," and kill tumors using a minimally invasive technique.
- Preliminary National Institutes of Health (NIH) research suggests RF energy may cure some patients, or be used in combination with other treatments.
- RF energy is being used to treat tumors throughout body.

SAN DIEGO — Using radiofrequency (RF) energy to "cook" and kill cancerous tumors without affecting surrounding healthy tissue may provide an alternative to surgery for patients with kidney and other cancers, according to National Institutes of Health (NIH) research being presented here today at the 25th Annual Scientific Meeting of the Society of Cardiovascular & Interventional Radiology (SCVIR).

"Preliminary results look promising for this technique, which is being used on tumors throughout the body, including melanoma and cancers of the prostate, breast, brain, liver and pancreas," said Bradford J. Wood, M.D., clinical investigator at the NIH Clinical Center, Bethesda, Md. "No definitive long-term trials have been

reported, but we have many patients who are cancer-free years after having the procedure."

RF is finding a niche in cancer treatment, which increasingly is being customized for each patient and may vary according to the size, location and type of tumor. In some cases RF may work alone, or it may be used in combination with other treatments, including surgery.

systemic chemotherapy and chemoembolization, an interventional radiology technique that delivers chemotherapy directly to the tumor and cuts off blood flow to the cancer, said Dr. Wood.

"RF is not a magic bullet yet, but it clearly can be a cure in some case," he said. "Many times it can be an alternative to a risky surgery, and sometimes it can change a patient from inoperable to operable."

Early results from an NIH Clinical Center study look promising for the use of RF energy in patients with certain kidney and adrenal tumors: of 18 kidney tumors treated, 13 (72 percent) showed no X-ray evidence of residual tumor immediately following treatment. One patient remains cancer-free two years after treatment. In a related NIH Clinical Center study of tumors of the adrenal glands, 7 of 11 adrenal tumors (64 percent) showed no active disease, while the remaining patients had some tumor remaining on follow-up imaging. All patients treated had X-ray evidence that most of the targeted tumor was killed by the treatment. Results are preliminary with only short-term follow-up. Long-term results will be forthcoming.

RF energy is fed to the tumor through a very small needle with an electrode on the tip that pierces the skin and is inserted directly into the tumor. After 10 to 12 minutes of continuous contact with the tumor tissue, the RF energy "cooks" a 1 inch to 2 inch sphere, killing the tumor cells. A large area of the tumor can be treated by cooking adjacent spheres. The dead cells are not removed, but become scar tissue and eventually shrink. Typically, the outpatient procedure is performed while the patient is lightly sedated, and the patient may go home hours later, usually feeling no pain.

"This is less expensive, safer and generally easier than surgery," said Dr. Wood. "And this is an option for some patients who have no other options. The technique is fast and we can reliably and predictably kill tissue that we're targeting, without affecting much healthy tissue."

Co-authors of a study on using RF to treat kidney tumors being presented at the meeting by Dr. Wood are: D.A. Gervais, M.D.; P.R. Mueller, M.D.; J. Spies, M.D.; M. Walther, M.D.; and C. Pavlovich, M.D.

Co-authors of a study on using RF to treat adrenal gland tumors being presented at the

meeting by Dr. Wood are: J. Abraham, M.D.; E.B. Levy, M.D.; R. Chang, M.D.; J. Spies, M.D.; and A. Fojo, M.D.

An estimated 5,000 people are attending the Annual Scientific Meeting in San Diego, Calif., of SCVIR, a professional society based in Fairfax, Va., for physicians who specialize in minimally invasive interventional procedures.

An interventional radiologist is a physician who has special training to diagnose and treat illness using miniature tools and imaging guidance. Typically, the interventional radiologist performs procedures through a very small nick in the skin, about the size of a pencil tip. Interventional radiology treatments are generally easier for the patient than surgery because they involve no surgical incisions, less pain and shorter hospital stays.

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Copies of 2000 SCVIR news releases are available online at www.pcipr.com/scvir beginning Monday, March 27.

Editor's note: Study numbers are current as of March 15, and may change.